

Mr. FLETCHER said: A few weeks ago, on returning from South America, the Baron de Penedo, the late Minister-Plenipotentiary from Brazil to Great Britain, desired that this work, published at the expense of the Brazilian Government, under the patronage of the Emperor, should be presented to the Royal Geographical Society. The river San Francisco is one of the mighty streams which rise in the same range of mountains whence some of the tributaries of the Amazons and the La Plata have their sources. Its mouth lies between the provinces of Pernambuco and Bahia. For 400 miles from the sea it is not navigable; but beyond that distance, above the falls of Paulo Alfonso, the Niagara of Brazil, the river is navigable for 800 miles. The railroads which are now penetrating into the interior from the coast have for their aim to tap the upper waters of this stream, in order that the products of that rich region may find an outlet to the sea. In this valley cotton is raised, the greater portion of it cultivated by free half-breeds. The work presented is a remarkable specimen of art, considering that it was wholly got up in the city of Rio Janeiro by native printers and lithographers. Not only this, but other enterprises gave evidence of the character of the Emperor, who in moral qualities as well as in intellectual acquirements, occupied a high position amongst monarchs. As soon as he came to the throne he established the Brazilian Geographical and Historical Institute; and at its fortnightly sittings His Majesty was always present, having his place at the right of the President. That Society published reports of some interesting expeditions, among others the one which was sent up the Madeira River, a branch of the Amazons, having its junction 1000 miles from the main stream, yet larger than the Mississippi. Prince Adalbert of Prussia, who in 1840 and 1841 ascended the Amazons and made other explorations in South America, was the first who gave notice to the world of the Emperor's intellectual ability. He was not only a chemist, a geologist, and a natural philosopher, but a thorough-read man in the scientific and literary doings of the world.

The first Paper was entitled:

1. *On the Islands of Kalatoa and Puloweh, North of Flores.* By JOHN CAMERON, Esq., F.R.G.S.

KALATOA is one of a group of six islands lying about seventy miles distant from the north coast of Flores, in the Java sea, and in an area of sunken coral-reefs forming a tableland beneath the surface of the ocean. It is about 8 miles long by 5 in breadth, and has an elevated undulating surface, covered with vegetation, and presenting a most inviting aspect. The author, who visited it about four years ago, found it uninhabited, and therefore could not corroborate the statement of Horsburgh, that it was peopled by a savage race who had massacred several crews of vessels which had been wrecked on its coasts. He was not successful even in finding fresh water on the island, although he traversed it with the assistance of a boat's crew for a long distance in various directions. The island appeared to be formed wholly of coral-rock, with beds of black peaty loam in the crevices, and beaches of white sand in the little harbours of the coast. The other islands of the group were afterwards visited, and found to be also destitute of fresh

water and inhabitants, although possessing a similar fresh, green, bushy vegetation to that of Kalatoa.

PULOWEH lies sixty miles to the southward of Kalatoa, and forms a complete contrast to it. Its northern side is steep, and rises to an altitude of about 600 feet; its soil is clayish, and its rocks are of a sandstone nature. Although, like Kalatoa, apparently destitute of fresh water, it supports a population of 5000 souls, a squalid looking race, of exceedingly attenuated figure, with an abundance of harsh matted hair on their heads. They had no clothing except a strip of cloth round their loins, and were exceedingly dirty; nevertheless, their countenances wore, for the most part, a comically good-natured expression. Not a single word of Malay could be detected in their language, but they understood the speech of a native of Flores who travelled with the party. They have a reputation among the neighbouring islands as boat-builders, and a well-built boat 40 feet long can be bought here for a flint-musket, costing in Singapore four dollars. According to Mr. Cameron the whole population, in their complete destitution of fresh water, make their ordinary beverage, of a fermented drink, "from the fruit of a tall palm-tree." The only other drink they had was the milk of the cocoa-nut. The fermentable juice is collected in bamboo pitchers, and has the property of being a harmless tippie in the morning, slightly stimulating at mid-day, and strongly intoxicating towards the afternoon, as fermentation goes on. In consequence of the habitual use of this drink, their daily life is a round of intoxication, often ending, towards night, in serious brawls.

Mr. CRAWFURD could not believe all Mr. Cameron stated. The island of Kalatoa in the Malay language meant the "old scorpion." In Captain Horsburgh's 'Directory' a different story was told about this island from what they had heard related by Mr. Cameron. In 1796, when a fleet of East-Indiamen were returning with a convoy, the ship *Ocean* was stranded on Kalatoa, and was there for ten or fifteen days. The crew found plenty of inhabitants, and made no complaint whatever of the want of water. The next island, Puloweh, was still more singular than Kalatoa. Mr. Cameron said there was not a drop of water to be had there. It was very odd the Malays should call it "Water-island"—*Pulo*, island; *wah*, water—a word which extended from Sumatra all through the South Sea Islands. With regard to his statement about palm-juice and cocoa-nut milk, a cocoa-nut tree will yield about fifty nuts per year, and each nut may contain about a pint and a half of water; and there must accordingly be an enormous quantity of cocoa-nuts upon the island to furnish drink for 5000 inhabitants. It was a total impossibility. He had no doubt there was plenty of water at Puloweh, and that there never existed an island with 5000 inhabitants in which there was not water in some shape or other.

Mr. WALLACE said he had never visited any island in the Indian Archipelago in which water was not to be had. In fact, one of the most remarkable things is the abundance of water in places where there appears to be not the

slightest probability of finding any. He mentioned one or two cases. One is a small island at the east end of Ceram, called Kilwaru, about a quarter of a mile long and fifty yards wide, consisting entirely of coral-rock and sand, almost perfectly level, the highest part being only four feet above high-water mark. The island is thickly inhabited, and in the middle of the main street, as it were, there are three or four wells of most excellent water. He stopped there himself a day, and got water from the wells, and drank it. The circumstance could hardly be accounted for except on the supposition that the coral-rock had some filtering power, by which the salt was separated from the water. On another occasion, he lost by accident two of his men upon a small uninhabited island. The boat, a native prow, broke her anchor while the men were ashore, and drifted away, the wind and the current preventing her return. It was a perfectly flat island, about a mile in diameter, not more than 4 or 5 feet above the sea, and consisting entirely of coral-rock. He sent a party in a boat to search for the missing men, but, owing to the stormy weather, they were not able to reach the island until a month afterwards. The men were found alive and in good health; for, by digging down through the rock with a hatchet until they got to the level of the sea, they obtained abundance of water, and thus, with the aid of shell-fish, they supported life. He had no doubt, if Mr. Cameron had dug down through the solid rock until he reached the sea-level, he would have found water. With regard to the other island, Puloweh, which he described as having a clay soil, no doubt an abundance of water existed there; the luxuriant vegetation that he spoke of must have been supported by an abundance of fresh water.

Dr. SEEMANN quite agreed with Mr. Crawford, that it would require an immense number of cocoa-nut trees to supply a population of 5000 people. The subject of "toddy" was an interesting one, and deserving of investigation. Although the Polynesian race is supposed to have come from the Malay Archipelago, yet it is very singular they did not carry with them the knowledge of making this drink. Cocoa-nut trees are very abundant there, and that makes it all the more singular. They have no intoxicating drinks in the South Sea Islands, except a mixture of kava (a kind of pepper) and water, which is the nearest approach they have to anything of the kind. The New Caledonians are a nation of water-drinkers; and one of the greatest anomalies that can be pointed out is the fact that this water-drinking race are great cannibals, and vicious in many other respects.

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The second Paper was—

2. *A Geological Expedition to the West Coast of Otago, New Zealand.* By  
JAMES HECTOR, ESQ., M.D., Provincial Geologist.

DR. HECTOR started from Otago on the 20th of May, 1863, in a yacht, to explore the numerous inlets on the s.w. coast of the Middle Island. Early in August he examined the head of Milford Sound with a view to discover if any pass existed which might form a practicable road between this harbour and the inhabited country to the east of the New Zealand Alps. He found, however, the end of the valley surrounded by precipitous mountains 5000 feet in height, without any signs of a "saddle" by which they could be crossed. Further to the north he discovered, whilst searching for the Awarua River of the Admiralty chart, the mouth